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09/686,784	10/10/2000	Miguel Philipe Paul Peeters	1073/OH657	4881

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Darby & Darby PC
805 Third Avenue
New York, NY 10022

EXAMINER

WANG, TED M

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 12/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/686,784

Applicant(s)

PEETERS, MIGUEL PHILIP
PAUL

Examiner

Ted M Wang

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: ____

DETAILED ACTION

1. Claims 1-17 are pending in the application.

Drawings

2. The drawings are objected to because
 - **wrong reference number "218" instead of "221" is assigned to Figure 3a and 3b, and**
 - **the reference number "224" should be changed to "224a", and**
 - **the reference numbers for HP filter, ADC, and line and output signals shown in Figure 2 (a) and (b) are not clear, and**
 - **the reference numbers for line signal between Receiver 2 and Splitter and Receiver 2 shown in Figure 3 are not clear.**

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:
 - Page 2 line 24 and page 3 line 14, "In addition to. Or alternatively" should be changed to "In addition to or alternatively."
 - Page 4 line 19, reference number "218" should be changed to "208."
 - Page 7 line 11, "Figure 4" should be inserted after 224a.
 - Page 7 lines 20-23, "In accordance with conventional techniques, the echo canceller 242a preferably comprises an adaptive filter and receives a

Art Unit: 2634

representation on line 225 of the signal in the transceiver for the modem 218, which is being transmitted by the hybrid 220" is inconsistent with Figure 2. In Figure 2 the line signal 225 is directly connected from a transmitter 223 to the hybrid 220 and in Figure 4 as cited by applicant the line signal 225 is directly connected to the echo canceller 242a of the receiver 224a.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-6, and 10-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Timm et al. (PT6,055,268).

- In regard claim 1, Timm et al. discloses a multimode digital modem for receiving a multi-band signal (column 17 lines 57-67, Fig. 6c) using an inverse discrete Fourier transform or inverse fast Fourier transform (Fig.6d element 640, and column 18 lines 1-2), comprising a plurality of demodulators (Fig.14a, 14c and 14d), each demodulator for demodulating a respective one of a plurality of bands in the multi-band signal (column 47

line 29 – column 48 line 16), each demodulator includes a discrete Fourier transform (Fig.6d element 666, and column 18 lines 1-20).

- In regard claim 3, the limitation that each demodulator further includes an equalizer connected to the output of the discrete Fourier transform can further be taught in column 3 lines 19-23.
- In regard claim 4, the limitation that each demodulator further includes a filter for filtering the received signal prior to the discrete Fourier transform can further be taught in Fig.6d element 660.
- In regard claim 5, the limitation that a transceiver including a receiver according to claim 1 can further be taught in Fig. 14a, 14c, and 14d.
- In regard claim 6, the limitation that each demodulator includes an echo canceller for removing an echo associated with a signal in a transmitter of the transceiver from the received signal can further be taught in column 2 lines 64-66.
- In regard claim 10, the limitation that the multi-band signal is generated by filtering the output of the modulator can further be taught in Fig.4a element 44.
- In regard claim 11, which is a method claim related to claim 1. All limitation is contained in claims 1. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 12, which is a method claim related to claim 3. All limitation is contained in claims 3. The explanation of all the limitation is already addressed in the above paragraph.

Art Unit: 2634

- In regard claim 13, which is a method claim related to claim 4. All limitation is contained in claims 4. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 14, which is a method claim related to claim 5. All limitation is contained in claims 5. The explanation of all the limitation is already addressed in the above paragraph.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Timm et al. (PT6,055,268) in view of Lee et al. (PT5,818,296).

- In regard claim 2, Timm et al. disclose all the limitation as described in claim 1 except specifically teaching that the process speed of each demodulator is determined by the respective frequency.
- Lee et al. cited by the instant applicant discloses a demodulator that the process speed of each demodulator is determined by the respective frequency (column 3 line 57 – column 4 line 13) in order to speed up the subsequent demodulation processes.

Art Unit: 2634

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kumar and Millers' receiver further in view of Lee's disclosure in order to speed up the subsequent demodulation processes.

8. Claims 7, 8, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timm et al. (PT6,055,268) in view of Ho et al. (PT5,317,596):

- In regard claim 7, Timm et al. disclose all the limitation as described in claim 1 except specifically teaching that echo canceller is connected to remove the echo at the input to the discrete Fourier transform.

Ho et al. discloses an apparatus for echo cancellation with discrete multitone modulation that echo canceller is connected to remove the echo at the input to the discrete Fourier transform (Fig.3 elements 100 and 56).

- In regard claim 8, the limitation that each echo canceller comprises an adaptive filter can further be taught in column 6 line 50 – column 7 line 4.
- In regard claim 15, which is a method claim related to claim 6. All limitation is contained in claims 6. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 17, which is a method claim related to claim 10. All limitation is contained in claims 10. The explanation of all the limitation is already addressed in the above paragraph.

9. Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timm et al. (PT6,055,268) in view of Agee (PT6,128,276).

Art Unit: 2634

- In regard claim 9 and 16, Timm et al. disclose all the limitation as described in claim 1 except specifically teaching that the multi-band signal is generated by nulling selected tones in the modulator.

Agee discloses a stacked-carrier discrete multiple tone communication technology and combinations with code nulling, interference cancellation, retrodirective communication and adaptive antenna arrays that the multi-band signal is generated by nulling selected tones in the modulator (Fig.4a element 86 and Fig.4b element 98, and column 11 lines 33-65 in order to maximize the signal-to-interference-and-noise ratio of the despread message sequence.

Conclusion

10. Reference 6,246,698 and 5,930,231 are cited because they are put pertinent to the digital multitone broadcasting system. However, none of references teach detailed connection as recited in claim.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M Wang whose telephone number is (703) 305-0373. The examiner can normally be reached on 8:30 a.m. - 5:00 p.m..


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Chin can be reached on (703) 305-4714. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 2634

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Ted M Wang
Examiner
Art Unit 2634

Ted M. Wang



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